

Customer No.: 31561
Application No.: 10/064,238
Docket No.: 8868-US-PA

AMENDMENT

To the Claims:

Please amend the claims according to the following listing of claims and substitute it for all prior versions and listings of claims in the application.

Claim 1. (currently amended) A method for hardware reduction in an echo canceller, comprising:

applying an N (N is a positive integer) times divide frequency sampling operation onto an input data list of the echo canceller, and the frequency-divided input data list is then transmitted to the echo canceller for performing an echo signal cancellation operation on the frequency-divided input data list;

applying an N times multiply frequency sampling operation onto an output data list of the echo canceller to generate a multiplied frequency data list; and

applying a low pass filter operation onto the multiplied frequency data list to generate a low pass data list.

Claim 2. (original) The method of claim 1, wherein a sampling frequency of the N times divide frequency sampling operation is adjustable.

Claim 3. (original) The method of claim 1, wherein a sampling frequency of the N times multiply frequency sampling operation is adjustable.

Claim 4. (original) The method of claim 1, wherein the low pass data list is used to eliminate a far-end echo signal.

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Claim 5. (original) The method of claim 1, wherein the step of applying the low pass filter operation onto the multiplied frequency data list to generate the low pass data list is achieved by using a low pass filter.

Claim 6. (original) The method of claim 5, wherein a cutoff frequency of the low pass filter is $1/(2N)$ times of the sampling frequency of the input data list.

Claim 7. (original) The method of claim 1, wherein the method is used in a receiver inside a transceiver.

Claim 8. (original) The method of claim 1, wherein the echo canceller adopts a finite impulse response filter.

Claim 9. (currently amended) A method for hardware reduction in a near-end crosstalk canceller, comprising:

applying an N (N is a positive integer) times divide frequency sampling operation onto an input data list of the amended, and the frequency-divided input data list is then transmitted to the near-end crosstalk canceller for performing an near-end crosstalk cancellation operation on the frequency-divided input data list;

applying an N times multiply frequency sampling operation onto an output data list of the near-end crosstalk canceller to generate a multiplied frequency data list; and

applying a low pass filter operation onto the multiplied frequency data list to generate a low pass data list.

Claim 10. (original) The method of claim 9, wherein a sampling frequency of the N times divide frequency sampling operation is adjustable.

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Claim 11. (original) The method of claim 9, wherein a sampling frequency of the N times multiply frequency sampling operation is adjustable.

Claim 12. (original) The method of claim 9, wherein the low pass data list is used to eliminate a near-end crosstalk signal.

Claim 13. (original) The method of claim 9, wherein the step of applying the low pass filter operation onto the multiplied frequency data list to generate the low pass data list is achieved by using a low pass filter.

Claim 14. (original) The method of claim 13, wherein a cutoff frequency of the low pass filter is $1/(2N)$ times of the sampling frequency of the input data list.

Claim 15. (original) The method of claim 9, wherein the method is used in a receiver inside a transceiver.

Claim 16. (original) The method of claim 9, wherein the near-end crosstalk canceller adopts a finite impulse response filter.